

WHAT IS CLAIMED IS:

1. A method of providing differentiated service in an information management environment, comprising generating billing information based at least in part on differentiated resource consumption within an information management system, differentiated system performance within an information management system, or a combination thereof.

2. The method of claim 1, wherein said method further comprises differentially monitoring said resource consumption within said information management system, differentially monitoring said system performance within said information management system, or a combination thereof; and wherein said method further comprises reporting said billing information.

3. The method of claim 1, wherein said information management system is coupled to a network having a network core that has excess information throughput capacity; and wherein said information management system is capacity-constrained.

4. The method of claim 1, wherein said method further comprises managing information within said information management system; and wherein said generating billing information comprises generating billing information according to two or more different information management price models.

5. The method of claim 4, wherein each of said two or more different information management price models is associated with a respective one of two or more different information management quality models.

6. The method of claim 1, wherein said information management system comprises a content source.

7. The method of claim 6, wherein said information management system comprises a network endpoint content delivery system.

8. The method of claim 6, wherein said method further comprises delivering content from said content source; and wherein said generating billing information comprises generating billing information according to two or more different content delivery price models.

9. The method of claim 8, wherein said method further comprises delivering a first content from said content source according to a first content delivery price model, and delivering a second content from said content source according to a second content delivery price model; wherein said differentiated resource consumption, said differentiated system performance, or a combination thereof is associated with delivery of said respective first content and said second content; wherein said generating billing information comprises generating billing information for delivery of said first content according to said first content delivery price model, and generating billing information for delivery of said second content according to said second content delivery price model; and wherein said first content and said second content comprise the same content, different content, or a combination thereof.

10. The method of claim 8, wherein each of said two or more different content delivery price models is associated with a respective one of two or more different content delivery quality models.

11. The method of claim 10, wherein said content comprises streaming content; wherein said method comprises delivering said streaming content from said content source according to two or more different content delivery quality models, at least one of said different content delivery quality models representing delivery of content at a stream rate different from another of said content delivery quality models; and wherein said generating billing information comprises generating billing information for delivery of said streaming content according to the content delivery price model associated with the respective content delivery quality model of the delivered content.

12. The method of claim 10, wherein said content comprises streaming content; wherein said method comprises delivering said streaming content from said content source according to two or more different content delivery quality models, at least one of said content delivery quality models representing delivery of content with an ad insertion policy different from another of said content delivery quality models; and wherein said generating billing

information comprises generating billing information for delivery of said streaming content according to the content delivery price model associated with the respective content delivery quality model of the delivered content.

5 13. The method of claim 12, wherein at least one of said content delivery quality models represents delivery of content with ad insertion and another of said content delivery quality models represents delivery of content without ad insertion.

10 14. The method of 10, wherein said content delivery price models, said content delivery quality models, or a combination thereof are user-selectable.

15 15. The method of claim 14, wherein said content delivery price models, said content delivery quality models, or a combination thereof are user-selectable on a real time or per-content request basis.

20 16. The method of 10, wherein said content delivery price models, said content delivery quality models, or a combination thereof are selectable by said information management system.

25 17. The method of claim 16, wherein said content delivery price models, said content delivery quality models, or a combination thereof are selectable on a real time or per-content request basis.

30 18. A method of providing differentiated service in an information management environment, comprising:

managing information in an information management system, and

generating billing information based at least in part on one or more system costs associated with said information management within said information management system.

19. The method of claim 18, wherein said information management system is coupled to a network; wherein said method further comprises delivering information from said information management system to said network, and generating billing information based at

least in part on information management costs associated with delivering said information to said network.

20. The method of claim 18, wherein said information management system comprises a content delivery system coupled to a network; wherein said method further comprises delivering content from said content delivery system to said network, and generating billing information comprising information generated based at least in part on the amount of one or more content delivery resources consumed within said content delivery system to deliver said content to said network.

21. The method of claim 20, wherein said content delivery system comprises a network endpoint content delivery system.

22. The method of claim 18, wherein said information management system is coupled to a network; wherein said method further comprises delivering information from said information management system to said network; wherein said method further comprises monitoring at least one of information delivery performance information, resource consumption information, or a combination thereof; and wherein said generating billing information comprises generating billing information based at least in part on said monitored information delivery performance, resource consumption information, or a combination thereof.

23. The method of claim 22, wherein said billing information comprises intermediate level reports; and wherein said method further comprises transmitting said intermediate level reports to a third party entity for conversion to desired billing format.

24. The method of claim 22, wherein said billing information comprises finalized billing reports.

25. The method of claim 22, wherein said billing information comprises billing reports having a format suitable for transmittal to a billing server, and wherein said method further comprises transmitting said billing reports to a billing server.

26. The method of claim 22, wherein said method further comprises transmitting said billing information to a third party client node configured to receive said billing information and to convert said billing information into suitable format for transmittal to a billing server.

5 27. The method of claim 74, wherein said billing information comprises static-based billing information.

28. The method of claim 27, wherein said static-based billing information comprises at least one of application level billing information, system resource level billing information, or
10 a combination thereof.

29. The method of claim 27, wherein said static-based billing information comprises at least one of processing cycles consumed per user, storage blocks retrieved per user, bandwidth consumed per user, or a combination thereof.

15 30. The method of claim 22, wherein said billing information comprises dynamic-based billing information.

31. The method of claim 30, wherein said dynamic-based billing information comprises at least one of SLA conformance basis billing, performance level basis billing, or a combination
20 thereof.

32. The method of claim 18, wherein said information management system comprises a content delivery system coupled to a network; wherein said method further comprises
25 delivering content from said content delivery system to said network, and generating billing information according to a multi-tiered billing rate based at least in part on the amount of one or more content delivery resources consumed within said content delivery system to deliver said content.

30 33. The method of claim 18, wherein said monitoring, billing and reporting are performed in a no penalty manner.

34. A system comprising an information management system capable of managing information; and generating billing information based at least in part on one or more system

costs associated with said information management within said information management system.

35. The system of claim 34, wherein said system comprises a plurality of processing engines that are distributively interconnected.

36. The system of claim 35, wherein said system comprises a content delivery system, and wherein said plurality of processing engines comprise a system management processing engine, a storage management processing engine, and an application processing engine.

37. The system of claim 36, wherein said content delivery system comprises a network endpoint content delivery system.

38. A method of providing differentiated service in an information management environment, comprising:

managing information in an information management system coupled to a network, and

generating billing information based at least in part on two or more different customized information management price models, at least one of said customized information management price models being based on one or more network characteristics associated with a user requesting said information management, one or more characteristics associated with a request for said information management, one or more system or subsystem characteristics associated with said information management system, or a combination thereof.

39. The method of claim 38, wherein at least two of said two or more different customized information management price models is associated with a respective one of two or more different customized information management quality models.

40. The method of claim 38, wherein said information management system comprises a content source; and wherein said managing information comprises delivering content to said network from said content source according to two or more different customized content delivery price models.

41. The method of claim 40, wherein at least one of said customized content delivery price models is based on characteristics associated with the last mile network infrastructure of a user requesting said content delivery.

42. The method of claim 40, wherein at least one of said customized content delivery price models is associated with a respective content delivery quality model, and wherein at least one of said customized content delivery price model, said customized content delivery quality model, or a combination thereof is based on characteristics associated with the last mile network infrastructure of a user requesting said content delivery.

43. The method of claim 41, wherein said method further comprises ascertaining said characteristics associated with said last mile infrastructure, deriving one or more customized content delivery price models based on said ascertained infrastructure characteristics, and offering said one or more customized content delivery price models to said user.

44. The method of claim 40, wherein at least one of said customized content delivery price models is based on said one or more characteristics associated with a user, and wherein said one or more characteristics associated with a user comprise SLA policy information.

45. The method of claim 40, wherein at least one of said customized content delivery price models is based on said one or more subsystem characteristics associated with said content delivery system, and wherein said one or more system or subsystem characteristics associated with said content delivery system comprise at least one of subsystem or system resource utilization at the time of content delivery.

46. The method of claim 40, wherein at least one of said customized content delivery price models is based on said one or more characteristics associated with a request for delivery of said content, and wherein said one or more characteristics associated with a

request for delivery of content comprise at least one of popularity of said requested content, time of day of said request for content, or a combination thereof.

47. The method of claim 40, wherein said information management system comprises a network endpoint content delivery system.

48. A method of providing differentiated service in an information management environment, comprising:

differentially monitoring resource consumption within an information management system on a real time or historical basis;

generating billing information based at least in part on said differentially monitored resource consumption; and

reporting said billing information.

49. The method of claim 48, wherein said method further comprises monitoring shared system resource consumption associated with at least one of a particular request for information management, a particular user requesting information management, or a combination thereof; and wherein said billing information is representative of said monitored consumption of said shared system resources by said particular user, or said monitored consumption of said shared system resources by said particular request, or a combination thereof, relative to monitored consumption of said shared system resources by other requests for information management, or other users requesting information management, or a combination thereof.

50. The method of claim 48, wherein said method further comprises monitoring shared system resource consumption associated with a particular information manipulation task; and wherein said billing information is representative of said monitored consumption of said shared system resources by said particular information manipulation task relative to consumption of said shared system resources by other information manipulation tasks.

51. The method of claim 48, wherein said monitored resource consumption comprises at least one of application level billing information, system resource level billing information, or a combination thereof.

5 52. The method of claim 49, wherein said monitoring comprises monitoring at least one of CPU processing cycle consumption, storage block retrieval, system bandwidth consumption, or a combination thereof.

10 53. The method of claim 48, wherein said method further comprises reporting said billing information to a tenant of said information management system.

15 54. The method of claim 48, wherein said method further comprises reporting said billing information to one or more physically remote located systems or external entities for further processing.

20 55. The method of claim 54, wherein said further processing comprises conversion of said billing information to desired billing format.

25 56. The method of claim 48, wherein said method further comprises reporting said billing information as a finalized billing report in desired billing format.

30 57. The method of claim 48, wherein said information management system has a deterministic system architecture that comprises a plurality of distributively interconnected processing engines.

58. The method of claim 57, wherein said plurality of distributively interconnected processing engines comprises a system management processing engine, and wherein said method further comprises using said system management processing engine to differentially monitor said resource consumption.

59. The method of claim 58, wherein one or more of said processing engines comprises a monitoring agent capable of monitoring resource consumption within or by said processing

engines, and wherein said system architecture further comprises a system monitor in communication with said monitoring agent that is capable of performing system management to differentially monitor said resource consumption.

5 60. The method of claim 57, wherein at least one of said plurality of processing engines is located physically remote from at least one other of said plurality of processing engines; and wherein two or more of said plurality of processing engines comprise at least one of separate components of a data center, separate components of a cluster of information management systems, separate processing engines that are distributively interconnected across a network,
10 or a combination thereof.

15 61. The method of claim 60, wherein said plurality of processing engines are distributively interconnected across a network, and include a system management processing engine and at least one of a storage management processing engine, an application processing engine, or a combination thereof; wherein said system management processing engine is located at a physically remote location from at least one of said storage management processing engine or said application processing engine; and wherein said method further comprises using said system management processing engine to differentially monitor said resource consumption.

20 62. The method of claim 48, wherein said information management system comprises at least one of a content delivery node, application serving node, or a combination thereof.

25 63. The method of claim 48, wherein said information management system comprises at least one of an origin storage node, an edge storage node, an origin application serving node, an edge application serving node, an edge caching node, an edge content replication node, or a combination thereof.

30 64. The method of claim 48, wherein said information management system comprises a content delivery system.

65. The method of claim 64, wherein said information management system comprises a network endpoint content delivery system.

66. A method of providing differentiated service in an information management environment, comprising:

5 differentially monitoring one or more system performance parameters associated with information management within an information management system on a real time or historical basis;

10 generating billing information based at least in part on said differentially monitored system performance parameters; and

 reporting said billing information.

15 67. The method of claim 66, wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

20 68. The method of claim 66, further comprising reporting said information related to one or more system performance parameters based at least in part on one or more class identification parameters associated with said information management, based at least in part on one or system service parameters associated with said information management, or a combination thereof.

25 69. The method of claim 68, wherein said information system comprises a content delivery system; wherein said information management comprises content delivery; and wherein said reported information comprises at least one of information related to operating or usage characteristics of said content delivery system, subsystems or resources; information related to processing of individual content delivery requests or classes of content delivery requests, or a combination thereof; wherein said one or more class identification parameters
30 comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; wherein said system service parameters comprise at least one of aggregate bandwidth ceiling, service level agreement policy, admission control policy, processing resource allocation

policy, storage resource allocation policy, or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

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70. The method of claim 66, wherein said reported information comprises at least one of information related to at least one of operating or usage characteristics of an information management system, subsystems or resources; information related to processing of individual information management requests or classes of information management requests; or a combination thereof.

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71. The method of claim 66, wherein said reported information comprises at least one of SLA conformance basis billing information, performance level basis billing information, or a combination thereof.

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72. The method of claim 66, wherein said reported information comprises at least one of system resource utilization metrics, application performance data, SLA performance data, or a combination thereof.

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73. The method of claim 72, wherein said method further comprises reporting said billing information to one or more physically remote located systems or external entities for further processing.

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74. The method of claim 73, wherein said further processing comprises conversion of said billing information to desired billing format.

75. The method of claim 72, further comprising reporting said billing information as a finalized billing report in desired billing format.

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76. The method of claim 66, wherein said billing information is related to consumption or use of one or more system resources.

77. The method of claims 66, wherein said billing information is generated on at least one of per-subscriber basis, per-request basis, per transaction basis, per-class basis, per-tenant

basis, per use basis, per relative resource consumption basis, per percentage-service guarantee basis, per time of day access basis, or a combination thereof.

78. The method of claim 66, wherein said billing information reflects at least one of allocated sustained and peak bandwidth per subscriber, percentage of time at or below sustained bandwidth level, percentage of time above sustained bandwidth level and at or below peak bandwidth level, or a combination thereof.

79. The method of claim 66, wherein said billing information reflects identity or disposition of requests for content.

80. The method of claim 79, wherein said billing information comprises at least one of record of content requests honored, record of content requests rejected, record of content requests by subscriber, record of individual content request start time and corresponding content request fulfillment finish time, or a combination thereof.

81. The method of claim 66, wherein said information management system has a deterministic system architecture that comprises a plurality of distributively interconnected processing engines.

82. The method of claim 81, wherein said plurality of distributively interconnected processing engines comprises a system management processing engine, and wherein said method further comprises using said system management processing engine to monitor said one or more system performance parameters.

83. The method of claim 81, wherein one or more of said processing engines comprises a monitoring agent capable of monitoring resource consumption within or by said processing engines, and wherein said system architecture further comprises a system monitor in communication with said monitoring agent that is capable of performing system management to differentially monitor said resource consumption.

84. The method of claim 81, wherein at least one of said plurality of processing engines is located physically remote from at least one other of said plurality of processing engines; and wherein two or more of said plurality of processing engines comprise at least one of separate

components of a data center, separate components of a cluster of information management systems, separate processing engines that are distributively interconnected across a network, or a combination thereof.

5 85. The method of claim 84, wherein said plurality of processing engines are distributively interconnected across a network, and include a system management processing engine and at least one of a storage management processing engine, an application processing engine, or a combination thereof; wherein said system management processing engine is located at a physically remote location from at least one of said storage management
10 processing engine or said application processing engine; and wherein said method further comprises using said system management processing engine to monitor said system performance parameters.

15 86. The method of claim 66, wherein said information management system comprises at least one of a content delivery node, application serving node, or a combination thereof.

20 87. The method of claim 66, wherein said information management system comprises at least one of an origin storage node, an edge storage node, an origin application serving node, an edge application serving node, an edge caching node, an edge content replication node, or a combination thereof.

25 88. The method of claim 66, wherein said information management system comprises a content delivery system.

30 89. The method of claim 76, wherein said information management system comprises a network endpoint content delivery system.